

# NAVISTAR, INC

## DEFECT INFORMATION REPORT

TO: Manager  
Engine Programs Group (6405J)  
Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

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DATE : November 6, 2014

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The following revised Defect Investigation Report and associated information is submitted in accordance with 40 CFR §1068.501.

### [40 CFR §1068.501(d)(1)] MANUFACTURER INFORMATION

Navistar, Inc.  
2601 Navistar Dr.  
Lisle, IL 60532

### [40 CFR §1068.501(d)(2)] DEFECT DESCRIPTION

Two OBD monitors were inadvertently turned off in three calibration groups. The monitors are for “suspect parameter number” (SPN) 3055, “failure mode indicators” (FMI) 15 and 17. These are injection fuel pressure monitors for the common rail injection system. When these monitors are turned “off” the MIL light will not be illuminated if injection pressure is lower or higher than commanded. Low fuel pressure may negatively affect performance due to low power while high fuel pressure may negatively affect fuel pump and engine durability.

Affected calibrations groups are: OK\*\*DC\*\*, OK\*\*DD\*\*, and OH\*\*AP\*\*. The “OK\*\*” calibration groups were production calibrations for SCR engines while the “OH\*\*” groups were briefly applied only to in-service Advanced EGR engines.

### [40 CFR §1068.501(d)(3)] DESCRIPTION OF VEHICLES/ENGINES AFFECTED

Vehicles containing engines from the following emissions families were affected.

<u>Engine Family Name</u>	<u>Model Year</u>	<u>Engine Model</u>	<u>Engine Plant Ship Dates</u>
DNVXH07570GA (EGR)	2013	12.4L MaxxForce 13	Not applicable
DNVXH0757TL1 (EGR)	2013	12.4L MaxxForce 13	Not applicable
DNVXH07570SB (SCR)	2013	12.4L MaxxForce N13	Not applicable
ENVXH07570SB (SCR)	2014	12.4L MaxxForce N13	Not applicable

### [40 CFR §1068.501(d)(4)] NUMBER OF ENGINES ESTIMATED TO HAVE DEFECT

<u>Family</u>	<u>Number of engines affected</u>	<u>Total Production</u>	<u>Percent of Family Affected</u>
DNVXH07570GA	226	1871	12%
DNVXH0757TL1	568	6340	9%
DNVXH07570SB	3009	5298	57%
ENVXH07570SB	4829	18254 (projected)	26%

In addition to the above, nine service replacement engines also have suspect calibrations. These values are based on an investigation into current engine programming as recorded in the warranty database.

[40 CFR §1068.501(d)(5)] EVALUATION OF EMISSIONS IMPACT

The Bosch common rail fuel system utilized in these engines continuously modulates fuel pressure dependent on engine operating conditions. It has a maximum fuel pressure capability of 2200 bar.

A complete Federal Test Procedure (FTP) cycle, consisting of cold and hot transient emission tests was performed at the limits the monitor would activate the MIL as detailed in the following.

Injection Pressure Positive Deviation, SPN 3055 FMI 15, sets a fault at approximately 100,000 hPa (100 bar) higher than commanded pressure. The demonstration tests include a faulted condition that creates high injection pressure at 110,000 hPa (110 bar) above commanded.

Injection Pressure Negative Deviation, SPN 3055 FMI 17, sets a fault at approximately 200,000 hPa (200 bar) lower than commanded pressure. The demonstration tests below include a faulted condition that creates low injection pressure at 210,000 hPa (210 bar) below commanded.

Test results tabulated below also contain upward adjustment factors.

Family: DNVXH07570SB (SCR emission control)

Test Cycle	Test Condition		Standard [g/bhp-hr]	Baseline [g/bhp-hr]	Faulted [g/bhp-hr]
FTP C/H combined w/UAF	Injection Pressure Positive Deviation 3055/15	NMHC	0.14	0.010	0.011
		CO	15.5	0.047	0.121
		NOx	0.20	0.183	0.130
		PM	0.01	0.001	0.001
FTP C/H combined w/UAF	Injection Pressure Negative Deviation 3055/17	NMHC	0.14	0.010	0.009
		CO	15.5	0.047	0.069
		NOx	0.20	0.183	0.156
		PM	0.01	0.001	0.002

Family: DNVXH07570GA (Advanced EGR emission control)

Test Cycle	Test Condition		Standard [g/bhp-hr]	Baseline [g/bhp-hr]	Faulted [g/bhp-hr]
FTP C/H combined w/UAF	Injection Pressure Positive Deviation 3055/15	NMHC	0.14	0.053	0.041
		CO	15.5	1.210	1.413
		NOx	0.50	0.478	0.416
		PM	0.01	0.001	0.001
FTP C/H combined w/UAF	Injection Pressure Negative Deviation 3055/17	NMHC	0.14	0.053	0.043
		CO	15.5	1.210	1.218
		NOx	0.50	0.478	0.478
		PM	0.01	0.001	0.001

Standard: standard the engine family was certified to

Baseline: emissions of the engine family aged to full useful life with no fault implanted

Faulted: emissions of the engine family aged to full useful life with fault implanted

For the range of fuel pressure tested, engines in both families remained in compliance.

[40 CFR §1068.501 (d)(6)] ANTICIPATED MANUFACTURER FOLLOW-UP

Navistar will be conducting a voluntary emission recall on all engines identified as having the suspect calibrations.

For SCR engines, corrected “OK\*\*” calibrations were released to production in July, 2014. For Advanced EGR engines, the suspect “OH\*\*” service calibrations were superseded by correctly functioning calibrations mid-April 2013. These corrected calibrations would have been automatically installed when any subsequent service to an EGR engine took place.

Additional checkpoints in the calibration release process have been implemented to avoid similar mistakes in future releases.

SIGNED: Dave Polivka  
Emissions Certification and Compliance